



Catalog #: 1756-OF8H
ControlLogix 8 Pt A/O I or V HART Module

Lifecycle status: ACTIVE

Technical Specifications

Electrical

Input, current	Yes
Input, voltage	Yes
Input, resistor	No
Input, resistance thermometer	No
Input, thermocouple	No
Input signal, configurable	Yes
Output, current	No
Output, voltage	No
Output signal configurable	No
Analogue inputs configurable	Yes
Analogue outputs configurable	No
Type of electric connection	Screw-/spring clamp connection
Wire type	Copper
Output range	-10...10V, 0...20 mA, 4...20 mA
Load reactance	Voltage: 1 µF, Current: 10 µH
Terminal block torque specifications	1756-TBNH: 1.36 Nm (12 lb. in.)
Input conversion method	Successive approximation
Module keying	Electronic, software configurable

Offset drift	100 $\mu\text{V}/^{\circ}\text{C}$, 200 $\text{nA}/^{\circ}\text{C}$
Output conversion method	R-Ladder DAC, monotonicity with no missing codes
Outputs	Eight voltage or current, one HART modem per module
Data format	Integer mode (left justified, 2 s complement) IEEE 32-bit floating point
Wire category	2 - on signal ports
Overvoltage protection	$\pm 24\text{V}$ DC
Module error	Voltage: 0.15% of range, Current: 0.3% of range
Gain drift with temperature	Voltage: 20 ppm/ $^{\circ}\text{C}$, Current: 35 ppm/ $^{\circ}\text{C}$
Voltage and current ratings	Backplane: 5.1V DC, 230 mA, 24V DC, 230 mA, Output voltage: -10...+10.4V, Output current: 4...20 mA
Settling time	Current (no HART): <23 ms to 95% with resistive loads, current (with HART): <37 ms to 95% with resistive loads, voltage: <8.5 ms to 95% with resistive loads
Total backplane power	6.54 W
Thermal dissipation	16.78 BTU/h
Power dissipation	4.92 W
Resolution	15...16 bits for all ranges
Wire size	1756-TBNH: Single wire connection: 0.33...2.1 mm^2 (22...14 AWG) solid or stranded copper wire, rated at 105 $^{\circ}\text{C}$ (221 $^{\circ}\text{F}$) or greater, 1.2 mm (3/64 in.) insulation maximum, 1756-TBNH: Double wire connection: 0.33...1.3 mm^2 (22...16 AWG) solid or stranded cop
Calibrated accuracy	Voltage: Better than 0.1% of range @ 25 $^{\circ}\text{C}$ (77 $^{\circ}\text{F}$) with HART disabled, Current: Better than 0.15% of range @ 25 $^{\circ}\text{C}$ (77 $^{\circ}\text{F}$) with HART disabled
Open circuit detection time	Current output only (output must be set to <0.1 mA)
Module HART scan time	Analog: 12 ms, minimum, floating point, HART: typically 1 s per HART channel enabled. Estimate 10 s if all 8 channels have HART enabled, Pass through messages, handheld communicators, secondary masters, communication errors, or configuration changes can s
Suitable for safety functions	No
Environmental	
Surrounding air temperature, max	60 $^{\circ}\text{C}$
North American temperature code	T4
Emissions	IEC 61000-6-4
ESD immunity	6 kV contact discharges, 8 kV air discharges
EFT/B immunity	$\pm 2\text{kV}$ at 5 kHz on signal ports

Relative humidity	5...95% noncondensing
Conducted RF immunity	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz
Surge transient immunity	±2kV line-earth (CM) on shielded ports
Operating temperature	0 °C <Ta <60 °C (32 °F <Ta <140 °F)
Radiated RF immunity	10 V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz, 10 V/m with 200 Hz 50% pulse 100% AM @ 900 MHz, 10 V/m with 200 Hz 50% pulse 100% AM @ 1890 MHz, 3 V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz
Nonoperating temperature	-40 °C

Mechanical

RTB keying	User-defined mechanical
Vibration	2 G @ 10...500 Hz
Shock	Operating: 30 G, Non operating: 50 G
Slot width	1

Certification

Calibration interval	12 months typical
ATEX temperature code	T4
IECEX temperature code	T4

Power

Isolation voltage	50V (continuous), basic insulation type, output channels to backplane, No isolation between individual output channels type tested at 1500V AC for 60 s
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Construction

Enclosure type rating	None (open-style)
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Certifications

- Safety
- American Bureau of Shippin

This product was certified with the above certifications as of 2024-06-26. Products sold before or after this date might carry different certifications. Please review the product label to check for the certifications your specific product carries.



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